

## **ABSTRACT OF THE DISCLOSURE**

The present invention provides a rapid virus entry/binding  
5 detection assay. An enzyme such as luciferase was incorporated at the C-  
terminal end of viral envelope proteins that would deliver the enzyme into the  
viral particles upon viral assembly. Virus entry/binding can then be assayed by  
determining the enzymatic activities in infected cells. The assay allows high-  
throughput non-radioactive detection of virus entry within 30 minutes after virus-  
10 cell contact. This assay provides high signal to noise ratio and is useful for  
screening compounds that affect virus-cell binding and entry. The design also  
permits packaging of potential therapeutic proteins into functional virus  
particles and delivering them to specific cellular targets.